

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 49

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS HENICK-KLING and
SIBYLLE KRIEGER

Appeal No. 1997-3953
Application 08/392,615¹

ON BRIEF

Before WINTERS, SCHEINER and ADAMS, Administrative Patent Judges.

SCHEINER, Administrative Patent Judge.

¹ Application for patent filed February 22, 1995. According to appellants, this application is a continuation 08/273,772, filed July 12, 1994, now abandoned; which is a continuation 08/145,045, filed November 3, 1993, now abandoned; which is a continuation 08/008,879, filed January 25, 1993, now abandoned; which is a continuation 07/879,453, filed May 4, 1992, now abandoned; which is a continuation 07/594,509, filed October 9, 1990, now abandoned.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 3 through 5 and 8 through 22, all the claims remaining in the application. Claims 8, 9 and 14 are representative and read as follows:

8. A culture medium for a starter culture for winemaking involving malolactic fermentation, said culture medium being a synthetic non-vegetable juice containing medium comprising on an aqueous liquid medium basis:

- (a) from about 4 to about 6% of a sole carbohydrate source consisting essentially of fructose and glucose and containing on a fructose plus glucose basis from about 97% to about 55% fructose and from about 3% to about 45% glucose,
- (b) from about 0.19% to about 0.7% L-malic acid or salt thereof,
- (c) malolactic bacteria growth supporting amount of a nitrogen source,
- (d) malolactic bacteria growth supporting amount of essential minerals and vitamins.

9. A method of propagating Leuconostoc oenos strains selected from the group consisting of Er-1a, Lo107, Lo42, PSU-1, Lc5m and Oeno, said method comprising propagating said bacteria in a culture medium which consists essentially of the culture medium of Claim 8.

14. A culture medium for a starter culture for winemaking involving malolactic fermentation, said culture medium being a synthetic non-vegetable juice containing medium comprising on an aqueous liquid medium basis:

- (a) from about 4 to about 6% of a sole carbohydrate source consisting essentially of fructose and glucose and containing on a fructose plus glucose basis from about 97% to about 50% fructose and from about 3% to about 50% glucose,
- (b) from about 0.19% to about 0.7% L-malic acid or salt thereof,
- (c) malolactic bacteria growth supporting amount of a nitrogen source,
- (d) malolactic bacteria growth supporting amount of essential minerals and vitamins.

The reference relied on by the examiner is:

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Henick-Kling, et al. (Henick-Kling), "Inhibition of Bacterial Growth and Malolactic Fermentation in Wine by Bacteriophage," Journal of Applied Bacteriology, Vol. 61, pp. 287-293 (1986).

The Examiner's Answer (paper no. 39) refers to a non-final rejection (paper no. 28) for the statement of the rejection; paper no. 28, in turn, refers to the final rejection (paper no. 20) in parent application serial no. 08/273,772 for the statement of the rejection. That rejection applied to claims 1 through 6, claims since amended or canceled. Needless to say, the examiner's handling of this procedural matter was improper under the rules extant at the time the Answer was written. Nevertheless, we shall decide the issues raised by the rejection as they apply to the claims in their present form. As matters now stand, claims 3 through 5 and 8 through 22 stand rejected under 35 U.S.C. § 103 as unpatentable over Henick-Kling.

We reverse.

DISCUSSION

According to the specification (pages 1 and 2):

Lactic acid bacteria (LAB) are of considerable importance in winemaking . . . [M]alolactic fermentation (MLF), the conversion of L-malic acid to L-lactic acid and CO₂ by certain strains of lactic acid bacteria [reduces the acidity of wine and] contributes much to the final wine quality.

Typically, spontaneous MLF occurs in wines of pH above 3.4 and is much delayed and irregular in wines of pH below 3.4 where MLF is most desirable for deacidification. This is due to the strong inhibition of growth of LAB at low pH. Inoculation of such wines with a large number of viable bacteria

avoids the [necessity for] growth before MLF is carried out. With a suitably prepared starter culture . . . a wine can be inoculated with a cell density of 5×10^6 [to] 5×10^7 viable bacteria/ml. This represents a stationary culture at maximum cell density in wine, very little or no further growth is necessary for complete conversion of the malic acid.

* * *

Leuconostoc oenos is generally the most predominant genus during active MLF, since this species is highly tolerant to the high acidity and ethanol in wine (citations omitted).

The present invention is directed to a synthetic, non-vegetable juice aqueous medium containing L-malic acid or a salt thereof; vitamins, minerals and nitrogen sufficient to support growth of malolactic bacteria; and a sole carbohydrate source consisting essentially of fructose and glucose at a ratio and total concentration of defined range. In one embodiment, the medium contains from about 97% to about 55% fructose and from about 3% to about 45% glucose, at a total concentration of about 4% to about 6% fructose plus glucose (claim 8). In another, the medium contains from about 97% to about 50% fructose and from about 3% to about 50% glucose, at a total concentration of about 4% to about 6% fructose plus glucose (claim 14).

Henick-Kling discloses modified de Man, Rogosa, Sharpe medium (MRSM), a synthetic, non-vegetable juice medium containing malic acid; vitamins, minerals and nitrogen sufficient to support growth of malolactic bacteria; and 20 g/l (2%) of a carbohydrate source consisting of 50% fructose and 50% glucose (as opposed to MRS, which contains glucose as the sole carbohydrate source). Page 288, upper left-hand column. Appellants and the examiner agree that Henick-Kling's medium differs from the

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claimed medium in the ratio of glucose to fructose, and/or the overall concentration of glucose plus fructose.

In the statement of the rejection, the examiner asserts that “[t]he ratio of fructose to glucose increases during the ripening of grapes such that a higher ratio of fructose to glucose is obtained,” and “[o]ne of ordinary skill in the art when designing a medium for a starter culture incorporates the conditions of the final operation, e.g. winemaking.” For these reasons, the examiner believes that “[i]t would have been obvious . . . to modify the medium of [Henick-Kling] and optimize the concentration of carbohydrates as well as the ratio of fructose to glucose given the known constituents of grapes/wine.” Final rejection, parent application serial no. 08/273,772, paper no. 20, page 5.

In response, appellants argue essentially that “an underlying basis of the rejection is that it would be obvious to optimize carbohydrate proportions and amounts starting with a synthetic medium described in [Henick-Kling] to obtain a medium useful for preparing a starter culture for winemaking,” but Henick-Kling “does not use the modified MRS medium it discloses . . . as a culture medium for a starter culture.” Rather, Henick-Kling “uses a medium containing grape, tomato, and apple juice for starter culture preparation.” Brief, pages 9 and 10.

Both the examiner’s and appellants’ arguments fall wide of the mark. The recitation “for a starter culture for winemaking involving malolactic fermentation” in each of the independent claims is a statement of intended use that does not confer a limitation on the

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claimed composition that would distinguish it from the prior art composition (which is clearly capable of supporting the growth of malolactic bacteria). In re Pearson, 494 F.2d 1399, 1403, 181 USPQ 641, 644 (CCPA 1974). Similarly, the examiner's rationale for modifying Henick-Kling's medium relies on one of ordinary skill in the art having some reason to convert the prior art medium to a "starter medium," but no reason is given. Moreover, there is uncontroverted evidence of record that the ratio of fructose to glucose does not increase during the ripening of grapes. See the declaration of Dr. Henick-Kling, submitted December 14, 1995.

In our view, the only difference between Henick-Kling's MRSM and the claimed medium is the ratio of glucose to fructose, and/or the overall concentration of glucose plus fructose; and the dispositive issue is simply whether there is any reason, stemming from the prior art, to modify the carbohydrate content of Henick-Kling's MRSM in the manner required by the present claims.

Turning to the Examiner's Answer (pages 4 and 5), under the heading "Response to Argument," we find the following statement from the examiner:

It has been clearly established in the prosecution of this case that the prior art discloses that the various proportions and amounts of the ingredients used in the claimed composition, i.e. fructose/glucose and malic acid, are result effective variables which be [sic] routinely optimized by one of ordinary skill in the art in practicing the invention disclosed by that reference . . . [i]t is well within the purview of the skilled artisan to vary fermentation conditions via routine experimentation in order to optimize microbial growth or production.

While the examiner is correct in that “discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art,” In re Boesch, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980) (citations omitted), our reviewing court has found an exception to this general rule where “the parameter optimized was not recognized to be a result effective variable,” In re Antonie, 559 F.2d 618, 621, 195 USPQ 6, 8 (CCPA 1977). Appellants “contend that invention lies in the conception that total glucose/fructose amount and ratio thereof are parameters which affect amount of cell density and the time required to reach maximum cell density,” which “[t]he applied reference does not teach.” In appellant’s view, “[t]here are other potential variables besides carbohydrate . . . in bacterial growth.” Brief, page 12.

As set forth in In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968), “[a] rejection based on section 103 clearly must rest on a factual basis” and “[t]he Patent Office has the initial duty of supplying the factual basis for its rejection.” “It may not, because it may doubt that the invention is patentable, resort to speculation [or] unfounded assumptions . . . to supply deficiencies in its factual basis.” Despite the examiner’s explicit statement above, we are unable to identify any factual basis for the assertion that “[i]t has been clearly established in the prosecution of this case that . . . the various proportions and amounts of the ingredients used in the claimed composition, i.e. fructose/glucose” were recognized as “result effective variables” at the time of the invention.

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On the record before us, we are constrained to reverse the examiner's rejection of claims 3 through 5 and 8 through 22 under 35 U.S.C. § 103 as unpatentable over Henick-Kling.

REVERSED

Sherman D. Winters
Administrative Patent Judge

Toni R. Scheiner
Administrative Patent Judge

Donald Adams
Administrative Patent Judge

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